20.8: Discriminant Cont'd

Finding a coefficient of ax^2+bx+c that will give you desired roots.

* you must know the discriminant table

$b^2 - 4ac$	roots	graph
1) < 0	1)	1)
2) $= 0$	2)	2)
3a) > 0 perf sq	3a)	3a)
3b) > 0 not perf sq.	3b)	3b)

Ex: Find the smallest integral value of k such that $kx^2 - 2x + 5 = 0$ has imaginary roots.

Ex

Find the largest integral value of k for which the roots of the equation $2x^2 + 7x + k = 0$ are real.

In 34–41, select the *numeral* preceding the expression that best completes each sentence.

34. The roots of $x^2 + 2x + k = 0$ are equal when k is
(1) 1 (2) 2 (3) 3 (4) 4

35. The roots of $x^2 + kx + 3 = 0$ are real when k is
(1) 1 (2) 2 (3) 3 (4) 4

36. The roots of $x^2 + bx + 8 = 0$ are imaginary when b equals
(1) 8 (2) -7 (3) 6 (4) -5

37. The roots of $ax^2 + 6x + 4 = 0$ are imaginary if a equals
(1) 1 (2) 2 (3) 3 (4) -1

Pg 953: 5-30 (÷5)
34-46 even

38. If the graph of $y = ax^2 + bx + c$ is tangent to the x-axis, then the roots of $ax^2 + bx + c = 0$ are
(1) rational and unequal (2) rational and equal
(3) irrational and unequal (4) imaginary

34. The roots of $x^2 + 2x + k = 0$ are equal when k is

(1) 1 (2) 2 (3) 3 (4) 4